EPA comments to the BERA Refined ESV Technical Memorandum
Columbia Falls Aluminum Company NPL Site
Columbia Falls, Montana
September 25, 2018

Text Comments:

1. Page 3, 4th paragraph, last sentence: The text states "Soil conditions at CFAC are not strongly oxidizing and a waste stream that would deposit Cr(VI) directly into soils has not been identified at the CFAC facility (Roux Associates, 2017)." The Roux Associates 2017 reference (Phase I Site Characterization Data Summary Report) does not mention Cr(VI) or information about the oxidizing strength of the soils at CFAC. Suggest removing the reference and providing additional discussion to justify this statement.

2. Bottom page 4, top of page 5: The text states "In the TEC2,3,7,8-TCDD calculation, dioxin/furan concentrations below detection limits will be estimated as 0.5 times the quantitation limit for constituents that were detected in at least one other sample in the soil dataset; constituents that were below detection limits in all soil samples will be assigned a concentration of 0 in the TEC2,3,7,8-TCDD calculation (USEPA, 2008b)."

    a. The EPA 2008b reference (Framework for Application of the Toxicity Equivalence Methodology for Polychlorinated Dioxins, Furans, Biphenyls in Ecological Risk Assessment) does not specifically outline this strategy (or any strategy) for dealing with non-detects. It leaves it up to the risk assessors and risk managers.

    b. The EPA 2008b document states: "The best method for handling non-detects in a particular risk assessment should be determined through consultation between risk assessors and risk managers early in the risk assessment process (planning/problem formulation phase)."

    c. It is preferred that all dioxin/furan non-detects be evaluated at ½ the sample-specific detection limit that accounts for matrix interference and sample size.

Table Comments:

Table 1 – Refined ESVs for Soil

1. Values for trivalent (mammals and birds) and hexavalent (mammals) chromium have been omitted for ORNL. Values are available for these analytes and receptors (as indicated). These values should be added, or justification provided for why they have been omitted.

2. The soil invertebrate screening value for hexavalent chromium is based on ORNL and not LANL. Rationale for this deviation from the hierarchy is not provided in the text.

Table 2 – Refined ESVs for Sediment

<u>USEPA Region 5 RCRA ESLs:</u>

3. Dinbenzo(a,h)anthracene – The Region 5 ESL is 0.033 mg/kg, but the Region 5 ESL reported in Table 2 is "---". The chemical name used for this compound by EPA is *Dinbenz(a,h)anthracene*.

Table 3 – Refined ESVs for Surface Water

DEQ-7 Aquatic Life Standards:

4. Lead: The DEQ-7 standard concentration reported in Table 3 is incomplete. The concentration should be reported as 0.545 µg/L, not 0.54 µg/L

USEPA Region 3 Freshwater Screening Benchmarks:

5. Cadmium – Region 3 screening value is 0.25 (@hardness = 100 mg/L), but Table 3 reports the Region 3 screening value as "---". Advise including a value for this source and updating it to be based on 25 mg/L.

6. Copper, Lead, Nickel, Zinc: The Region 3 screening values reported in Table 3 are based on a hardness of 100 mg/L, not 25 mg/L. Advise updating Region 3 values to be based on a hardness of 25 mg/L.

7. Cyanide: Region 3 screening value (5 µg/L) is reported as Free Cyanide, not Total Cyanide.

8. Fluoride: Region 3 screening value is 2119.4 (@hardness = 100 mg/L), but table 3 reports the Region 3 value as "---". Advise including a value for this source and updating it to be based on 25 mg/L.